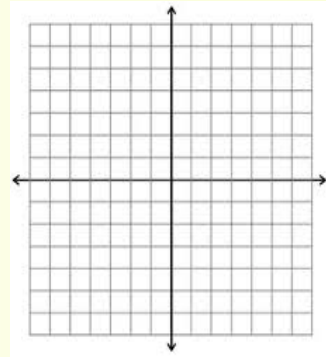
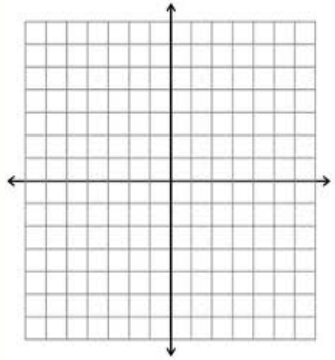


Alg. 2 Warm Up #6-3

1. Describe the transformations and sketch the graphs:

a) $y = 2(x - 3)^2 + 1$

b) $y = \frac{1}{x + 2} - 3$



HW Questions:

2-91. Write each expression in simpler radical form.

a. $\sqrt{x} + \sqrt{y} + 5\sqrt{x} + 2\sqrt{y}$

b. $(2\sqrt{8})^2$

c. $\frac{\sqrt{50}}{\sqrt{2}}$

d. $\sqrt{\frac{3}{4}}$

$$\sqrt{\frac{50}{2}}$$

$$\sqrt{25}$$

$$5$$

$$\frac{\sqrt{3}}{\sqrt{4}}$$

$$\frac{\sqrt{3}}{2}$$

2-92. Multiply each of the following expressions.

a. $2x^2(3x + 4x^2y)$

b. $(x^3y^2)^4(x^2y)$

2-93. Sketch a graph and draw the line of symmetry for the equation $y = 2(x - 4)^2 - 3$. What is the equation of the line of symmetry?

2-96. By mistake, Jim graphed $y = x^3 - 4x$ instead of $y = x^3 - 4x + 6$. What should he do to his graph to get the correct one?

2-97. Simplify each radical expression.

a.

$$(3\sqrt{2})^2$$

b.

$$\sqrt{\frac{9}{4}}$$

c.

$$\sqrt{\frac{1}{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

d.

$$(3+\sqrt{2})^2$$

2-98. Factor each of the following expressions. Look for the difference of squares and common factors.

a.

$$4x^2 - 9y^2$$

b.

$$8x^3 - 2x^7$$

c.

$$x^4 - 81y^4$$

d.

$$8x^3 + 2x^7$$

e.

Did you use a shortcut to factor the expressions in parts (a) through (c)? If so, describe it. If not, what pattern do you see in these expressions? How can you use that pattern to factor quickly?

$$3 \cdot \sqrt{2} \cdot 3 \cdot \sqrt{2}$$

$$3 \cdot 3 \cdot \sqrt{2} \cdot \sqrt{2}$$

$$9 \cdot 2$$

$$9d) (3+\sqrt{2})(3+\sqrt{2})$$

$$9 + 3\sqrt{2} + 3\sqrt{2} + 2$$

$$11 + 6\sqrt{2}$$

2-97. Simplify each radical expression.

a.

$$(3\sqrt{2})^2$$

b.

$$\sqrt{\frac{9}{4}}$$

c.

$$\sqrt{\frac{1}{3}}$$

d.

$$(3+\sqrt{2})^2$$

2-98. Factor each of the following expressions. Look for the difference of squares and common factors.

a.

$$4x^2 - 9y^2$$

b.

$$8x^3 - 2x^7$$

c.

$$x^4 - 81y^4$$

d.

$$8x^3 + 2x^7 = 2x^3(4+x^4)$$

e.

Did you use a shortcut to factor the expressions in parts (a) through (c)? If so, describe it. If not, what pattern do you see in these expressions? How can you use that pattern to factor quickly?

$$\begin{aligned} & a^2 - b^2 = (a+b)(a-b) \\ & (x^2)^2 - (9y^2)^2 = (x^2+9y^2)(x^2-9y^2) \\ & = (x^2+9y^2)(x+3y)(x-3y) \end{aligned}$$

2-99. Solve for x : $ax + by^3 = c + 7$. $\frac{ax}{a} = \frac{c + 7 - by^3}{a}$

2-100. Write an equation for each of the following sequences.

a. 20, 14, 8, ...

b. -6, -24, -96, ...

Classwork due
tomorrow:

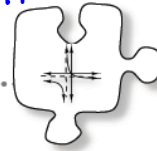
Warm up on top

2- #64, 66, 67

2- #95 revised (Purple)

CP's: 2 - # 102, 103, 105

p. 91

2.2.2 What is the significance of (h, k) ?Describing (h, k) for Each Family of Functions

In Lesson 2.2.1, you learned that you could apply your knowledge of transforming parabolas to transform several other parent functions. In this lesson, you will consolidate your knowledge of each of the parent functions that you know and you will identify the importance of the point (h, k) for each parent function and its family.

2-102. Think about the parent graph for parabolas, $y = x^2$.

- Write the equation of a parabola that will be the same as the parent graph, but shifted four units to the right.
- Does the strategy you used to move parabolas horizontally also work for other parent graphs? Justify your answer.
- You have learned that the general equation for a parabola is $y = a(x - h)^2 + k$. To move the graph of $y = x^2$ h units to the *right*, you replaced x^2 with $(x - h)^2$. Work with your team to justify why replacing x with $(x - h)$ moves a graph to the right. Think about multiple representations as you discuss this and be prepared to share your ideas with the class.

- 2-103. With your team, brainstorm a list of all of the families of functions that you have learned about so far in your study of algebra.



- 2-105. What is the equation of the parent graph of a line? Use what you have learned about transforming parent graphs to write the general equation of a transformed line.
- Use this general equation of a line to write the equation of a line with slope $\frac{4}{5}$ that passes through the point $(3, 9)$.
 - A line passes through the points $(-1, 5)$ and $(8, -2)$. Substitute each of these into the general equation to create a system of equations. Now solve this system to find the slope. Is this how you have found slope in the past?

HW: 2 -

107 ---> 113